FIG.1

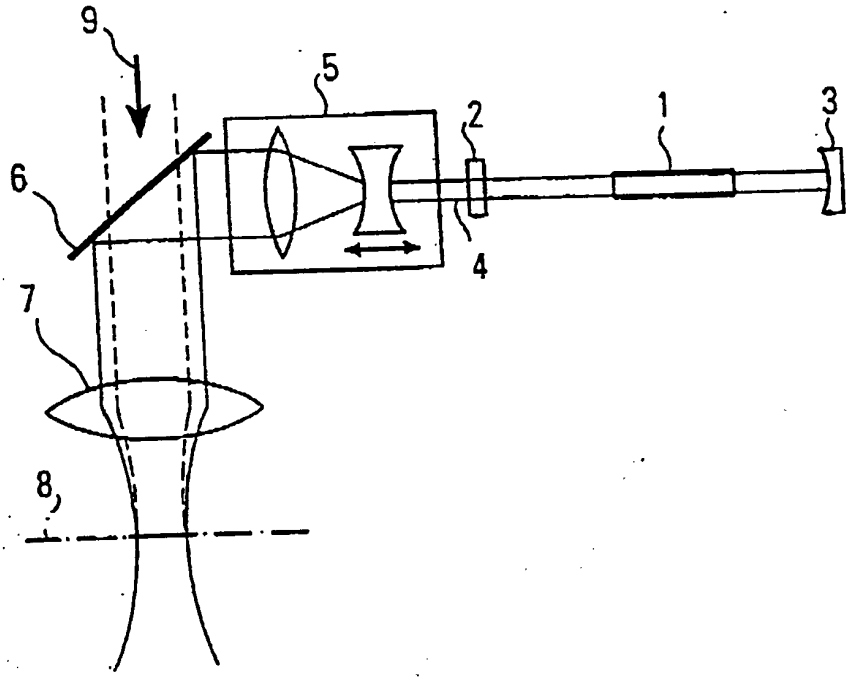


FIG.2a

Prior Art

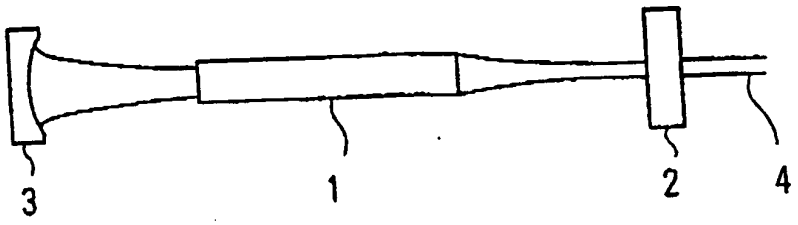


FIG.2b

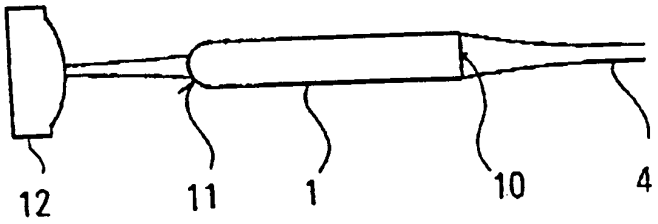


FIG.2c

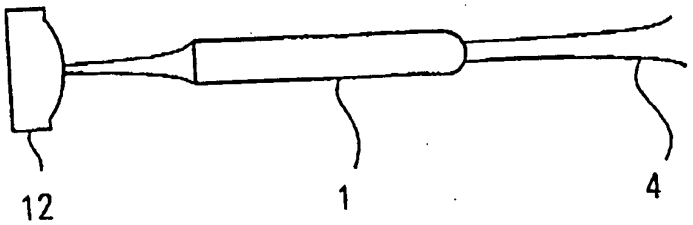


FIG.3

Initial pulse characteristics for a "classic" resonator (prior art)
Simulation

Focusing lens: f= 116 mm
Distance Focusing lens-end of resonator: 285 mm
Resonator length: 325 mm
Rod length: 90 mm
Radius of curvature: rear mirror: see legend
Radius of curvature of output mirror: planar

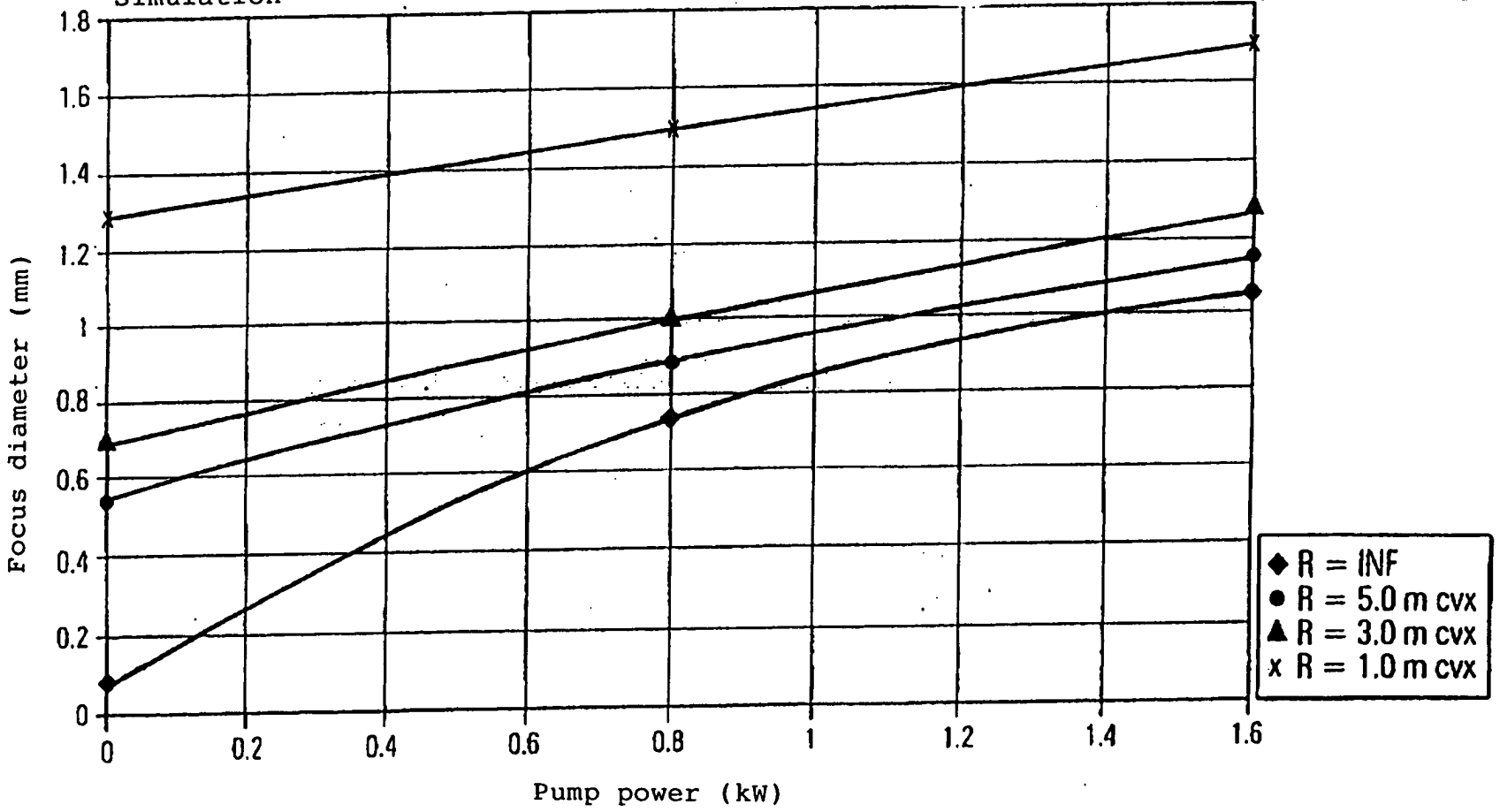
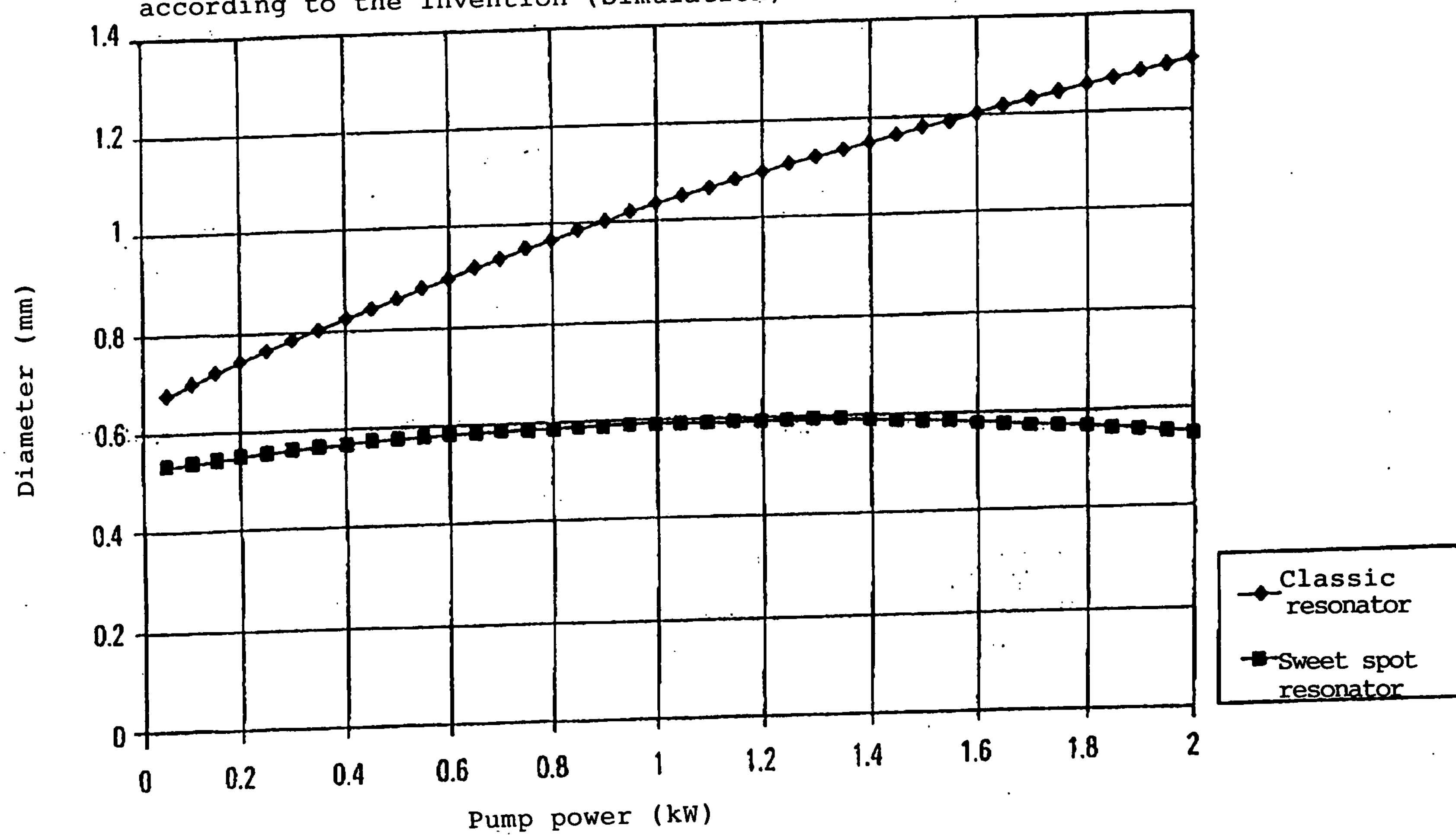


FIG.4

Comparison of a prior art resonator with a resonator according to the invention (Simulation)



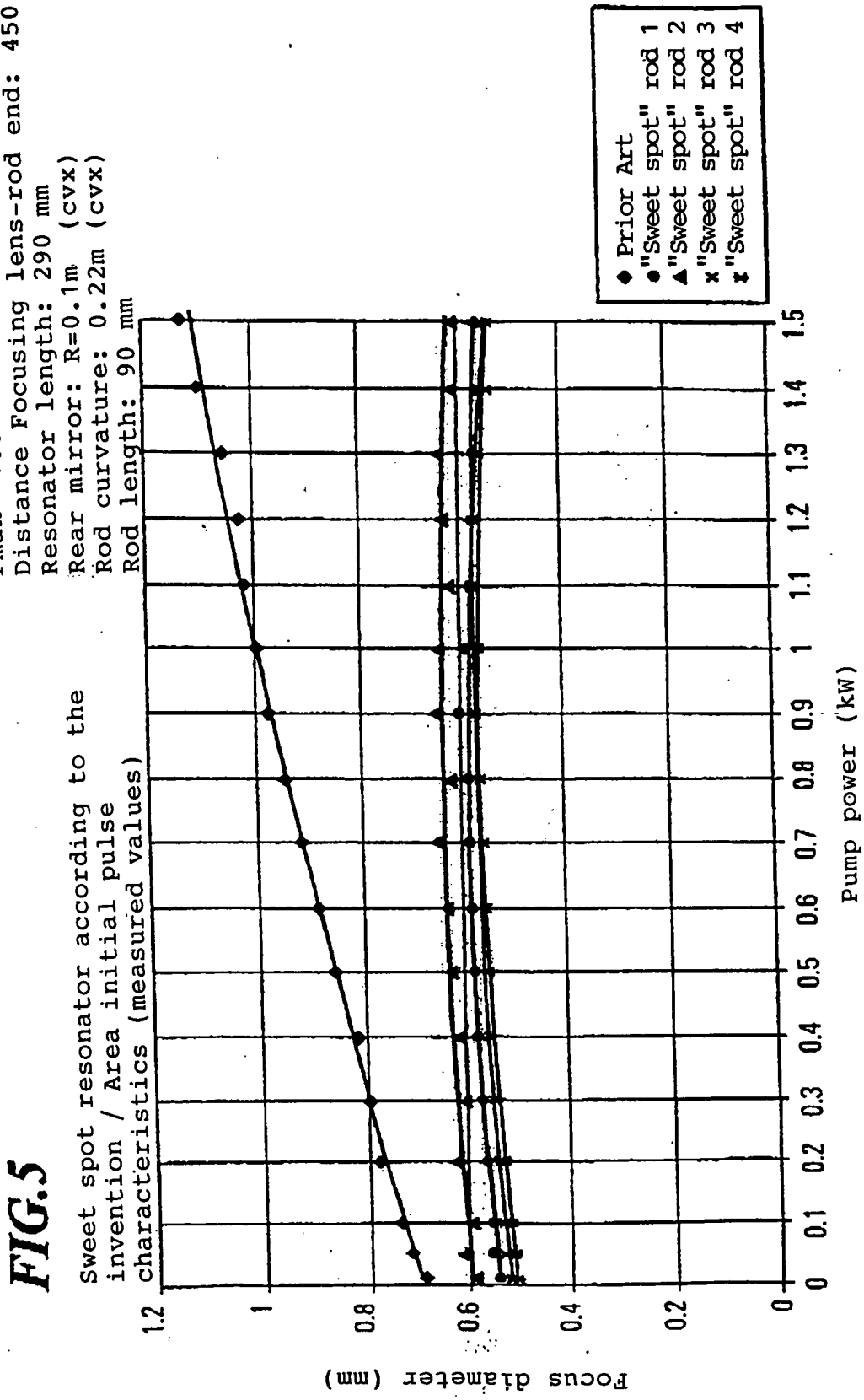
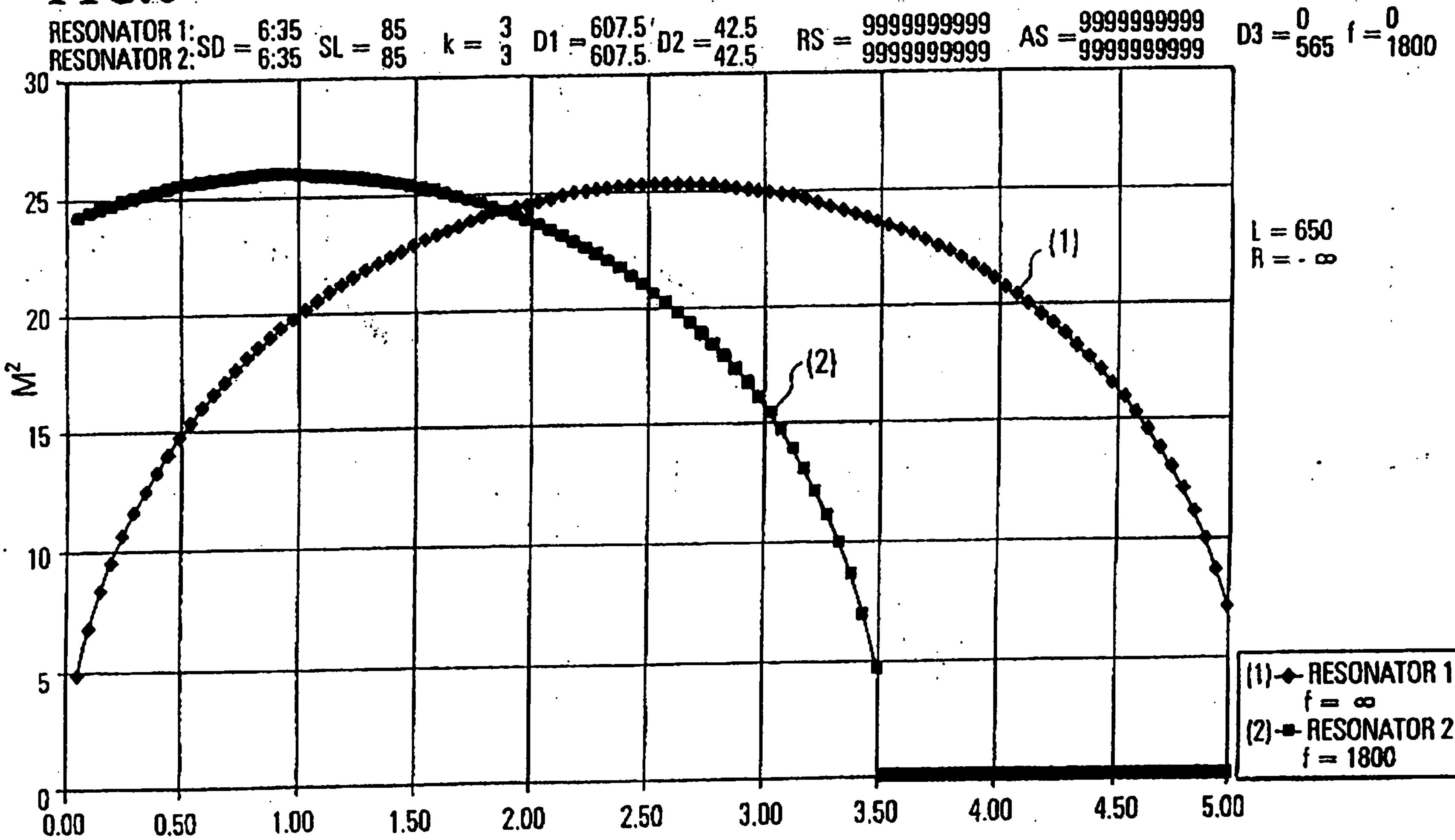

Measured with CCD camera
Focusing lens: f= 116 mm
Pmax= 1.5 kW
Distance Focusing lens-rod end: 450 mm
Resonator length: 290 mm
Rear mirror: R=0.1m (cvx)
Rod curvature: 0.22m (cvx)
Rod length: 90 mm
Sweet spot resonator according to the invention / Area initial pulse characteristics (measured values)
◆ Prior Art
●"Sweet spot" rod 1
▲"Sweet spot" rod 2
x"Sweet spot" rod 3
⧗"Sweet spot" rod 4
Focus diameter (mm)
Pump power (kW)
0
0.2
0.4
0.6
0.8
1
1.2
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
1.1
1.2
1.3
1.4
1.5

FIG.5

FIG.6 Multi-mode output side: M^2



Resonator with lens between rear mirror and rod (D3=0 and f=0 represents calculation without lens)